IRU-5000 Series

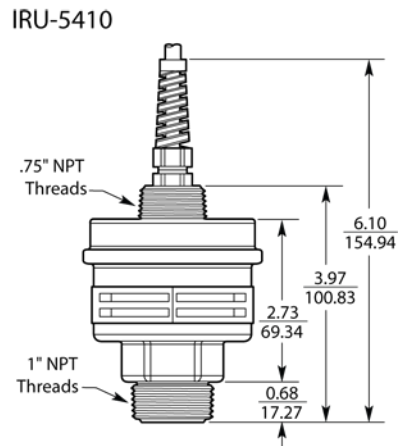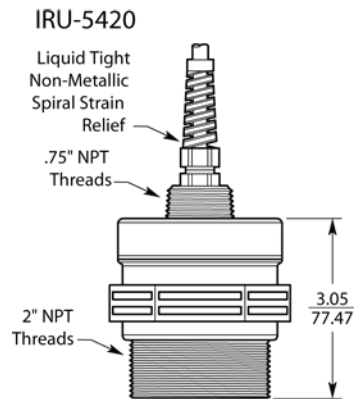Non-Incendive, Short-Range Ultrasonic Level Sensor

Datasheet

The IRU-5000 series provides a non-contact method of detecting distance, with on-board level and volume calculations. IRU-5000s have the smallest blanking distance in APG's ultrasonic sensors at 4", which makes them perfect for precise use in tight quarters, such as tote or small container level measurement. With built-in technology to compensate for unpredictable variables such as humidity, temperature, and agitators, the IRU-5000 is designed to excel in short-range applications.

Features

- Range: 4 - 79 in. (102 - 2007 mm) for liquids and solids
- AutoSense Software for hassle-free setup
- Internal temperature compensation
- Works on liquids, solids, and bulk solids
- Excitation input for datalogging
- Class I Div 2 Non-incendive for 4-20 mA output
- IP65 Enclosure rating: dust-tight, protected against water jets

IRU-5000 SPECIFICATIONS

IRU-5420

Liquid Tight
Non-Metallic
Spiral Strain
Relief

.75" NPT
Threads

2" NPT
Threads

3.05
77.47

IRU-5410

.75" NPT
Threads

1" NPT
Threads

6.10
154.94

3.97
100.83

2.73
69.34

0.68
17.27

Performance
- Operating Range
     4 - 79 in. (102 - 2007 mm) for liquid or solid targets
     4 - 39 in. (102 - 1004 mm) for bulk solids
- Beam Pattern: 9° off axis
- Internal Temperature Compensation
- Frequency: 143 kHz
- Accuracy: ±0.25% of detected range
- Resolution: 0.1 in. (2.5 mm)
- Response Time: Programmable (22 ms minimum @ 6.58 ft.)

Connectivity
- Output:
     4-20 mA
     4-20 mA with (2) NPN outputs
     0-2.5 V/0-5 V (selectable via software)
     RS-232 option (with voltage output only)
- Excitation Input For Datalogging
     With voltage output only

Environmental
- Enclosure Protection: IP65
- Operating/Compensated Temperature Range:
     -20° to 140°F (-30° to 60°C)

Electrical
- Total Current Draw: 75 mA @ 24 VDC
- Operational Supply Voltage: 12-28 VDC
- Excitation Supply Voltage: 5 VDC minimum
- Programming Supply Voltage
     RST-3002:   15-28 VDC
     RS-232:   15-28 VDC
- Wiring Connection:
     3, 5, or 8-conductor shielded cable
     4, 5, or 8-pin micro connector

Programming
- Interface with RST-3002 Programmer
     (purchase separately - not needed for "S" option)
     Interfaces with 32- and 64-bit operating systems
- User selected units of measure

Physical
- PC/PET upper housing
- PVDF transducer housing
- Transducer Type: Ceramic

Certification
- IP65
- CSA:
     Inputs: 12 - 28 VDC; Outputs: 4-20 mA, NPN
     Class I Division 2 Groups C & D T6 (Ta 60°C)
     Ex nA IIB T6
     Class I, Zone 2; AEx nA IIB T6

     General Purpose (All IRU-5000 models without RS-232)

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COMMON MODEL CONFIGURATIONS

Model Number	Model Description
IRU-5413-C6	4 - 79 in. range, 143 kHz, **1" MNPT, 4-20 mA Output, 6 ft cable**
IRU-5415-C6	4 - 79 in. range, 143 kHz, **1" MNPT, 4-20 mA / 2 NPN Outputs, 6 ft cable**
IRU-5423-C6	4 - 79 in. range, 143 kHz, **2" MNPT, 4-20 mA Output, 6 ft cable**
IRU-5425-C6	4 - 79 in. range, 143 kHz, **2" MNPT, 4-20 mA / 2 NPN Outputs, 6 ft cable**

MODEL CONFIGURATION OPTIONS

Model Number: IRU - 5 _____ _____ - _____
                           A   B   C

A. Mounting
☐ **41** 1 in. NPT
☐ **42** 2 in. NPT

B. Output
☐ **3**   4-20 mA†
☐ **5**   4-20 mA with 2 NPN outputs†
☐ **9**   0-2.5V / 0-5V††
☐ **9S** 0-2.5V / 0-5V with RS-232

C. Cable/Microconnector
☐ **C__** Cable (Specify Length in feet) Standard 6 feet of cable
☐ **M**   Micro Connector

†Note: This option CSA non-incendive certified
††Note: This option CSA General Purpose certified with 2" NPT mount (IRU-5429), but not CSA certified with 1" NPT mount (IRU-5419).

IRU-5000 ACCESSORIES

Please order separately, by part number.

Description	Part Number
Over Molded Extension Cables with Foil Shield	
4 Conductor	
Straight, 2 m	135407-0002
Right Angle, 2 m	135407-1002
Straight, 5 m	135407-0005
Right Angle, 5 m	135407-1005
5 Conductor	
Straight, 2 m	135415-0002
Right Angle, 2 m	135415-1002
Straight, 5 m	135415-0005
Right Angle, 5 m	135415-1005
8 Conductor	
Straight, 2 m	135423-0002
Straight, 10 m	135423-0010
Programming Module	
RST-3002 (USB - 32 and 64 bit compatible)	125389-1000

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